



1H 2021 KEY REVENUE ANALYSIS

September 2021

HKEX
香港交易所

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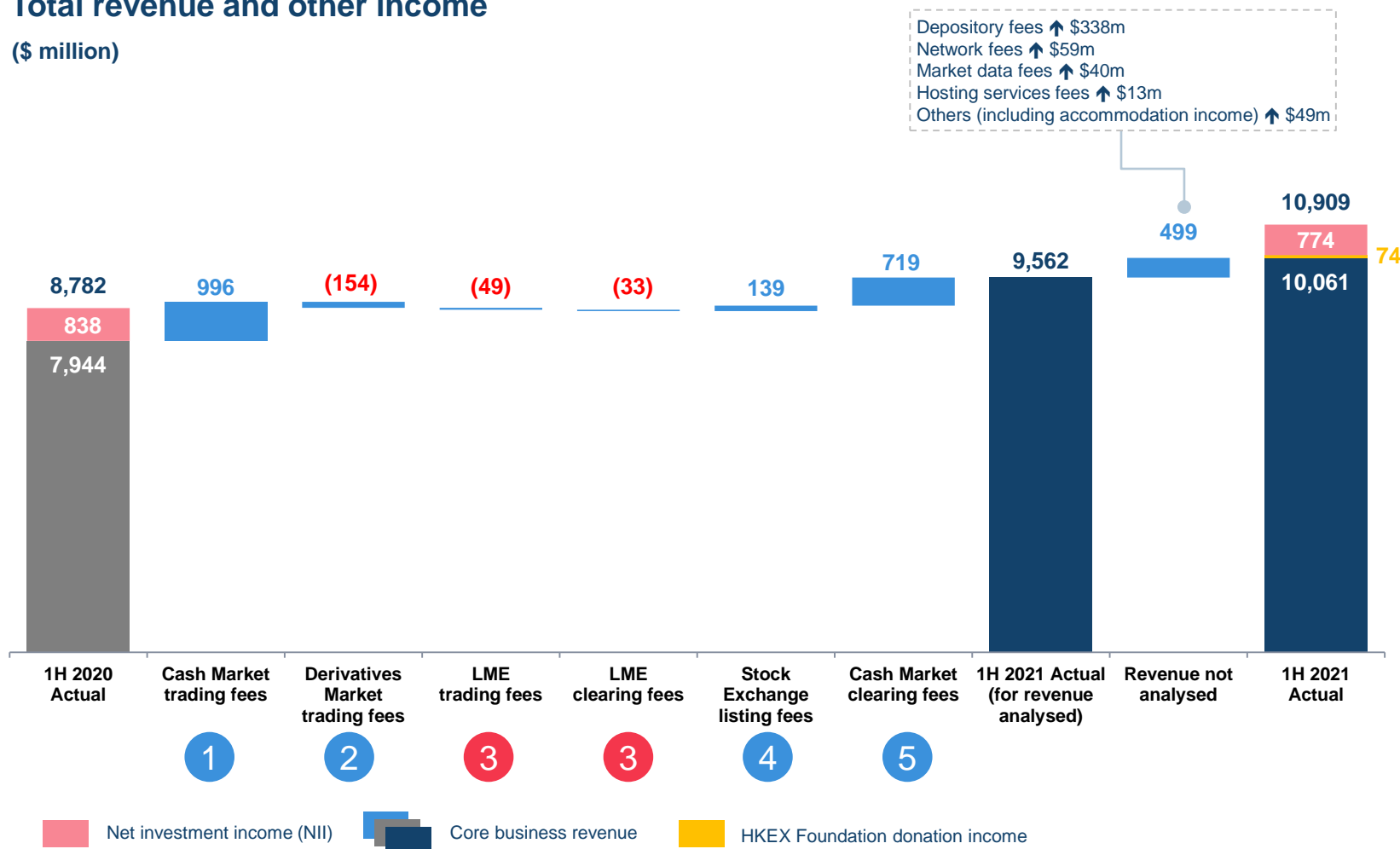
1H 2021 Key Revenue Analysis



Revenue movements 1H 2021 vs 1H 2020

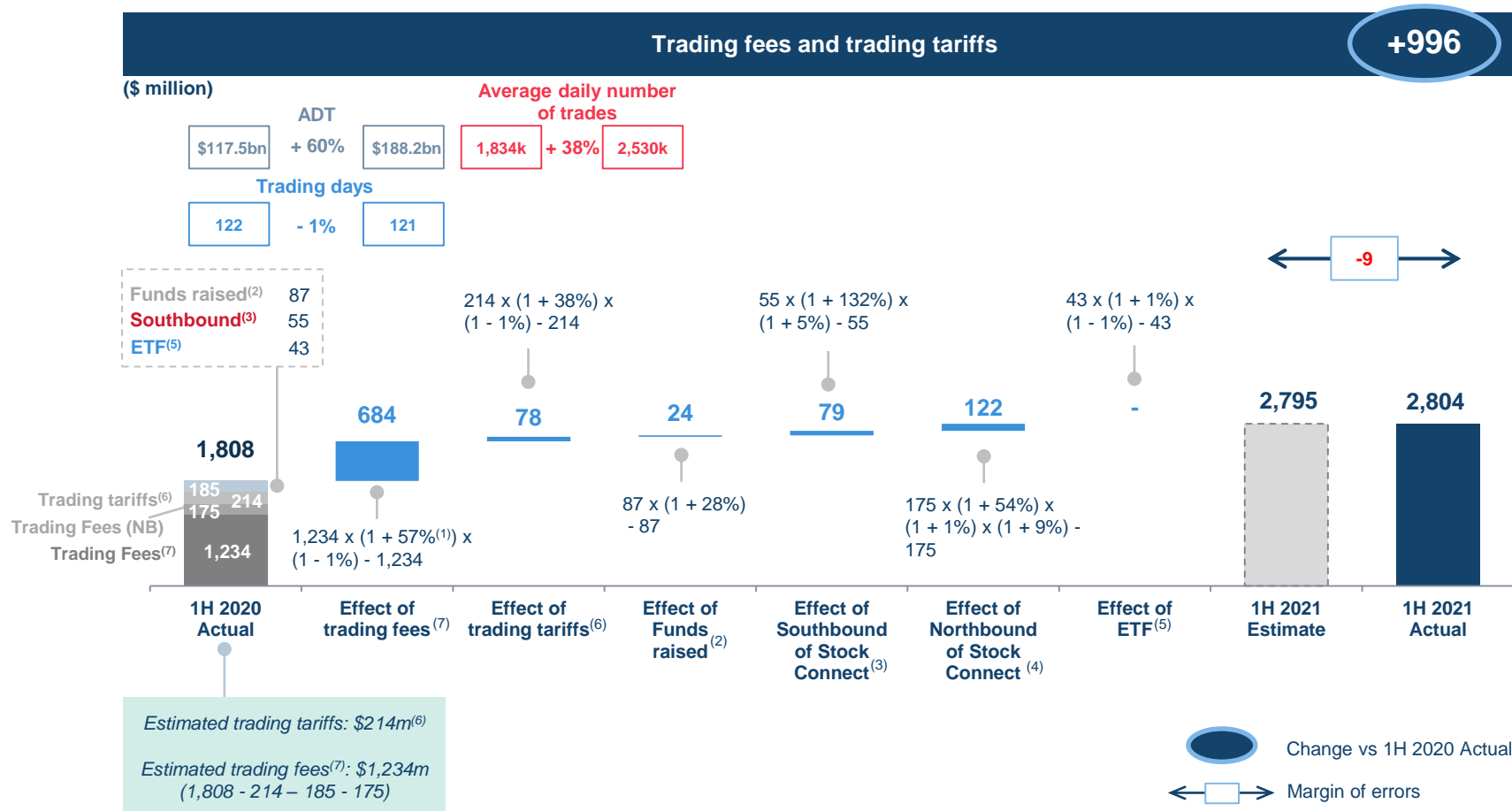
Total revenue and other income

(\$ million)



Cash Market trading fees ¹

Estimate based on volume change



Cash Market trading fees and trading tariffs move closely with changes in total value of trades and number of trades

1. Refers to % change in Headline ADT (ie, Stock Exchange trades (including DWs, CBBCs and warrants) less SB ADT/2 less ETF ADT (including L&I Product): 1H 2021: \$157.0bn; 1H 2020: \$100.1bn; ↑ 57% (Headline ADT - 1H 2021: \$188.2bn; 1H 2020: \$117.5bn SB ADT - 1H 2021: \$48.1bn; 1H 2020: \$20.7bn; ETF (including L&I Product) ADT - 1H 2021: \$7.2bn; 1H 2020: \$7.1bn)

2. Funds raised x 0.005% x 2 sides (Funds raised - 1H 2021: \$1,104.8bn; 1H 2020: \$865.2bn; ↑ 28%)

3. Southbound (SB) trading fees: ADT of SB x no. of trading days x 0.005% x 50% (SB ADT: 1H 2021: \$48.1bn; 1H 2020: \$20.7bn; ↑ 132%; No. of trading days: 1H 2021: 111 days; 1H 2020: 106 days; ↑ 5%)

4. Northbound (NB) trading fees: ADT of NB x no. of trading days x 0.00487% x 40% (NB ADT: 1H 2021: RMB114.4bn; 1H 2020: RMB74.3bn; ↑ 54%; No. of trading days: 1H 2021: 112 days; 1H 2020: 111 days; ↑ 1%; Exchange rate: 1H 2021: 1.19; 1H 2020: 1.09; ↑ 9%)

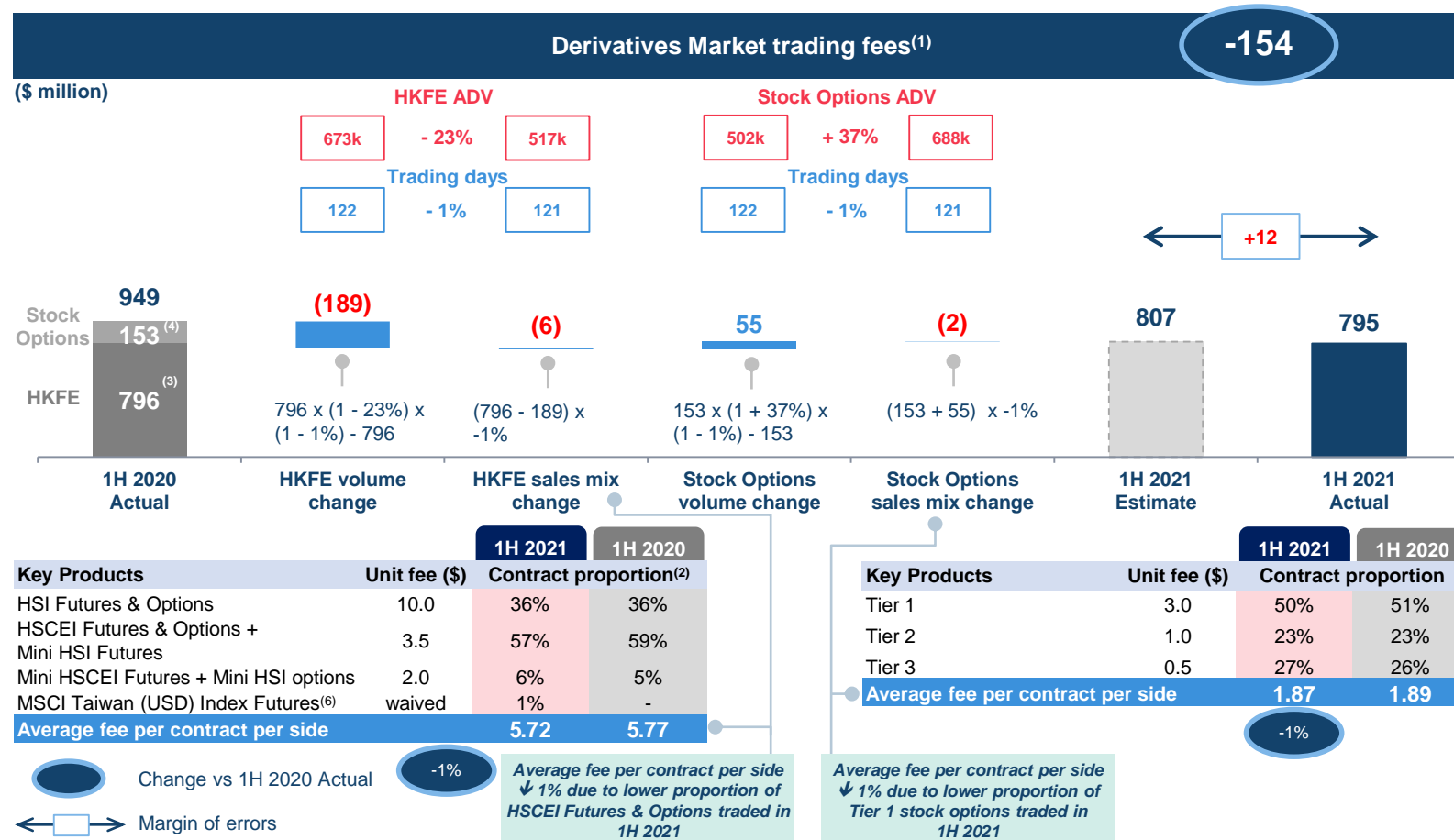
5. ETF (including L&I Product) trading fees = ADT x 0.005% x 2 sides x no. of trading days x (1 - exemption %) (ADT - 1H 2021: \$7.2bn; 1H 2020: \$7.1bn; ↑ 1%). Exemption % - 50%.

6. Trading tariffs of equity products traded on the Stock Exchange (included under the Cash segment) of \$176m is disclosed in the 2020 Interim Report. Trading tariffs of DWs, CBBCs and warrants (included under the Equity and Financial Derivatives Segment) is estimated by average daily no. of trades (316k) x no. of trading days (122) x \$0.5 x 2 sides = \$38m.

7. Excluding trading fees arising from funds raised, Stock Connect and ETFs (including L&I Products)

Derivatives Market trading fees 2

Estimate based on volume and sales mix change



Derivatives Market trading fees generally move with the total number of contracts traded and average fee per contract

1. Includes trading fees allocated to the Post Trade segment

2. Calculated based on % of total contracts of key products (ie, HSI Futures & Options, HSCEI Futures & Options and Mini HSI & HSCEI Futures)

3. Trading fees of HKFE products = Fees included under Equity and Financial Derivatives segment (\$631m, disclosed in 2020 Interim Report) + Fees allocated to Post Trade segment (estimated by ADV (673k) x no. of trading days (122) x fee per contract (\$2 per note 5 below) = \$164m), and round up to \$796m.

4. Trading tariffs of stock options = Fees included under Equity and Financial Derivatives segment (\$112m, disclosed in the 2020 Interim Report) + Fees allocated to Post Trade segment (estimated by ADV (502k) x no. of trading days (122) x tariff per contract (\$0.66 per note 5 below) = \$40m), and round up to \$153m.

5. Fee/tariff per contract is calculated based on information disclosed in 2020 Annual Report:

Trading fees of HKFE products allocated to the Post Trade segment (\$303m) / (ADV (607k) x no. of trading days (249)) = \$2 per contract.

Trading tariffs of stock options allocated to the Post Trade segment (\$86m) / (ADV (526k) x no. of trading days (249)) = \$0.66 per contract.

6. MSCI Taiwan (USD) Index Futures were launched on 6 July 2020 with unit fee of US\$1. Trading fee waiver has been granted since 14 August 2020, and will last till 31 December 2021.



LME trading and clearing fees

3

Estimate based on volume change and change in fee per contract

LME trading fees -49

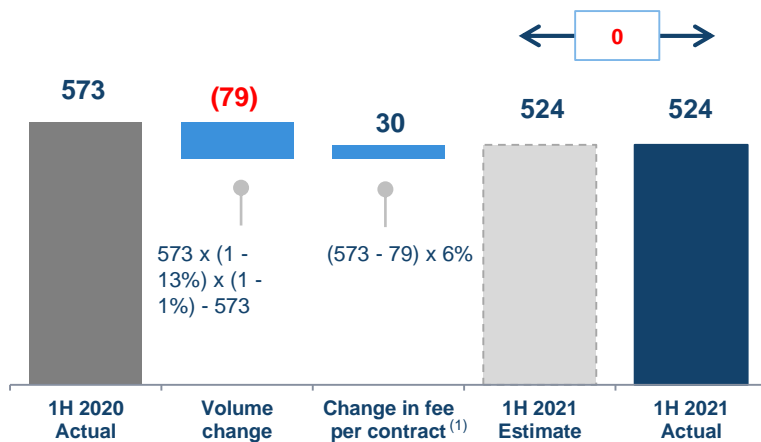
(\$ million)

Chargeable ADV⁽¹⁾

625k - 13% 544k

Trading days

125 - 1% 124



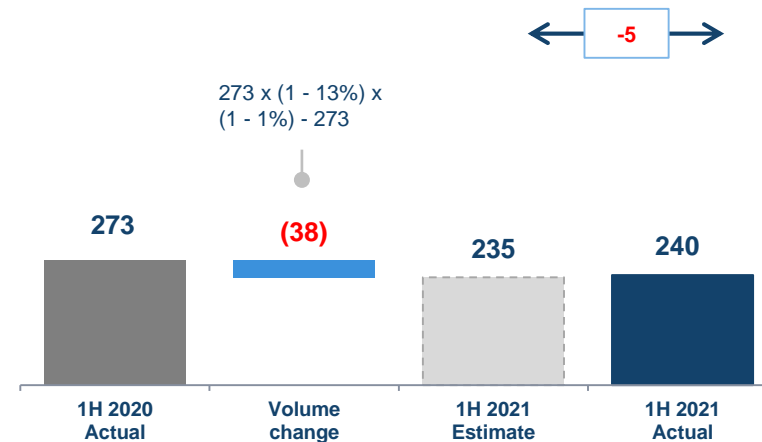
LME clearing fees -33

Chargeable ADV⁽¹⁾

625k - 13% 544k

Trading days

125 - 1% 124



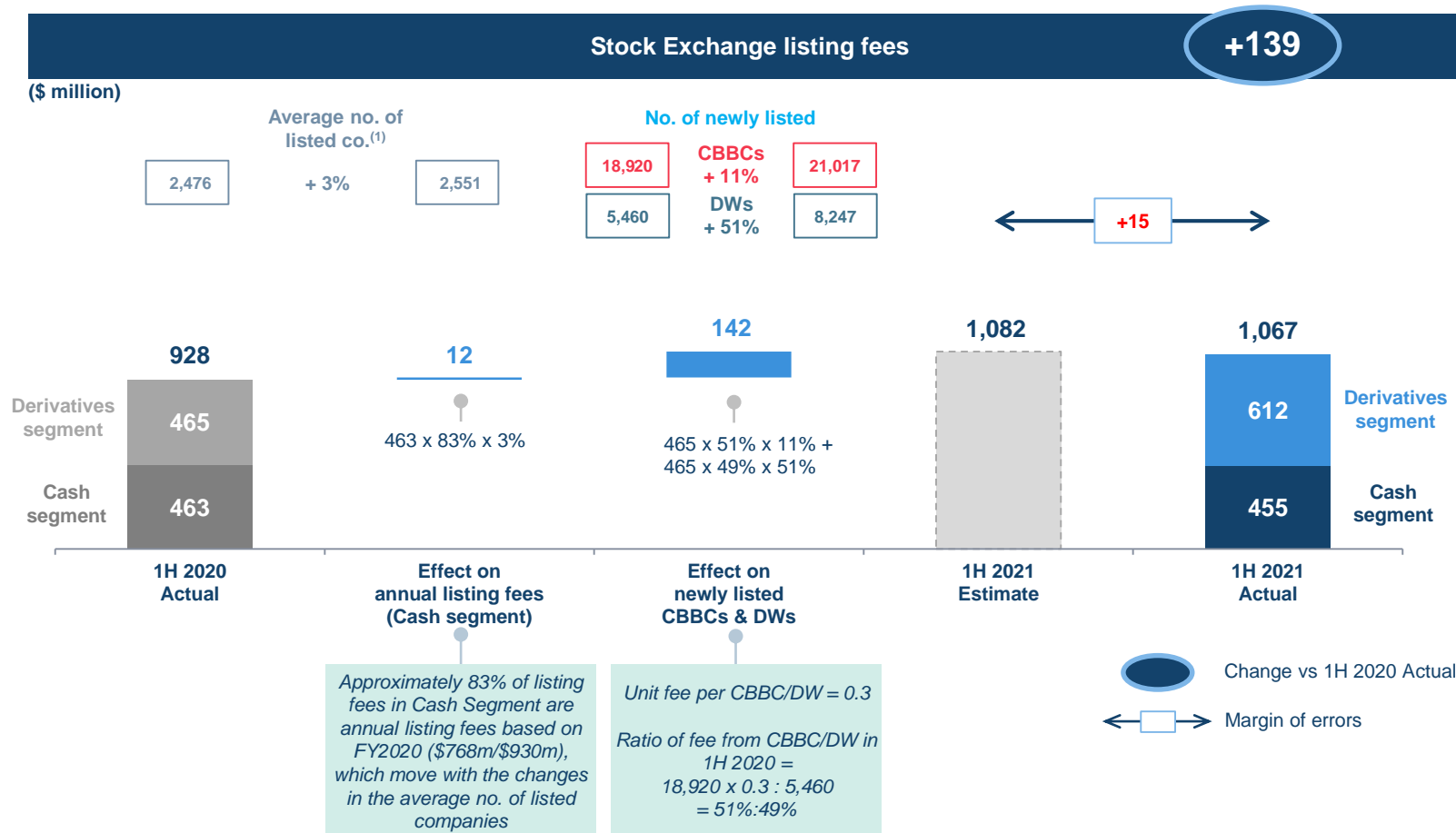
LME and LMEC fees generally move with total number of contracts traded and average fee per contract

1. Due to COVID-19, LME suspended trading activity on the Ring since 23 March 2020. As the trading fees of Non-Ring trades are higher than Ring's, higher fee per contract (+6% per note 2 below) is taken into consideration in the 1H 2021 revenue projection.
2. Average trading fee per contract is estimated by LME trading fees / Chargeable ADV / no. of trading days / 2 sides – Q1 2021: \$3.89; 1H 2020: \$3.67; ↑ 6%
(LME trading fees - Q1 2021: \$263m; 1H 2020: \$573m;
Chargeable ADV - Q1 2021: 536k; 1H 2020: 625k
Trading days - Q1 2021: 63; 1H 2020: 125)



Stock Exchange listing fees 4

Estimate based on no. of listed companies and newly listed DWs/CBBCs



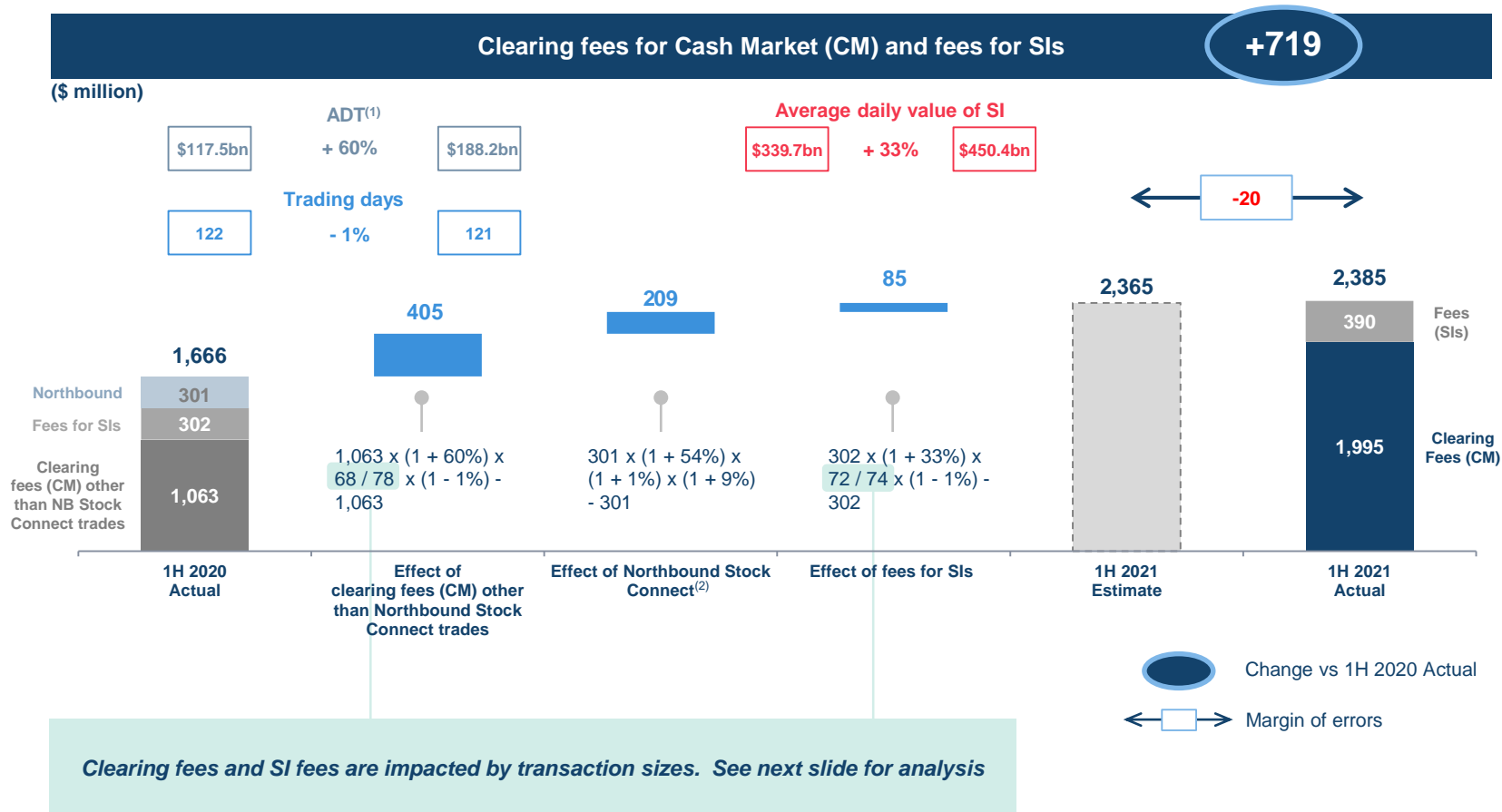
Stock Exchange listing fees move closely with changes in no. of listed companies and newly listed DWs/CBBCs, but are also impacted by number of forfeitures and withdrawn IPO applications during the periods.

1. Average number of listed companies represents the average number of listed companies at month end.



Cash Market clearing fees 5

Estimate based on volume change



Clearing fees and SI fees move with total value of trades and total value of SIs but are also impacted by transaction sizes of the trades/SIs.

1. For Stock Exchange trades (including DWs, CBBCs and warrants), excluding stock options
2. Northbound (NB) ADT - 1H 2021: RMB114.4bn; 1H 2020: RMB74.3bn; ↑ 54%;
No. of trading days: 1H 2021: 112 days; 1H 2020: 111 days; ↑ 1%;
Exchange rate: 1H 2021: 1.19; 1H 2020: 1.09; ↑ 9%
3. The impact of Southbound fees is immaterial and therefore not included in the analysis.

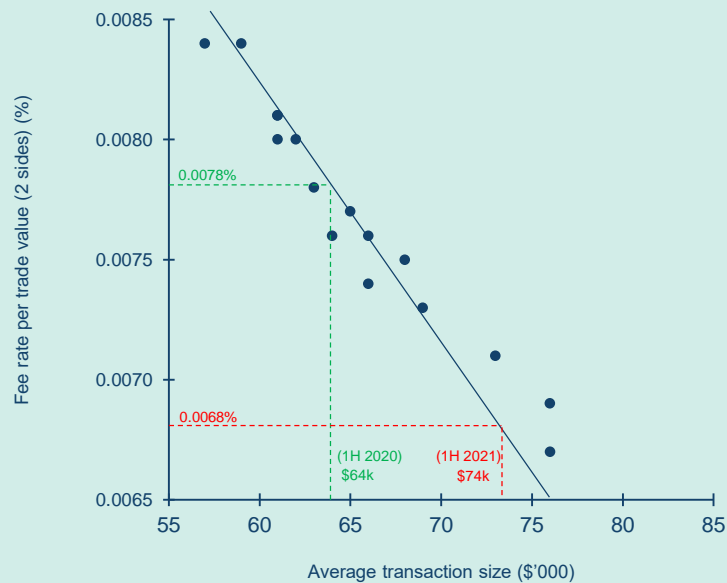


Cash Market clearing fees 5

Impact of transaction sizes of the trades / SIs

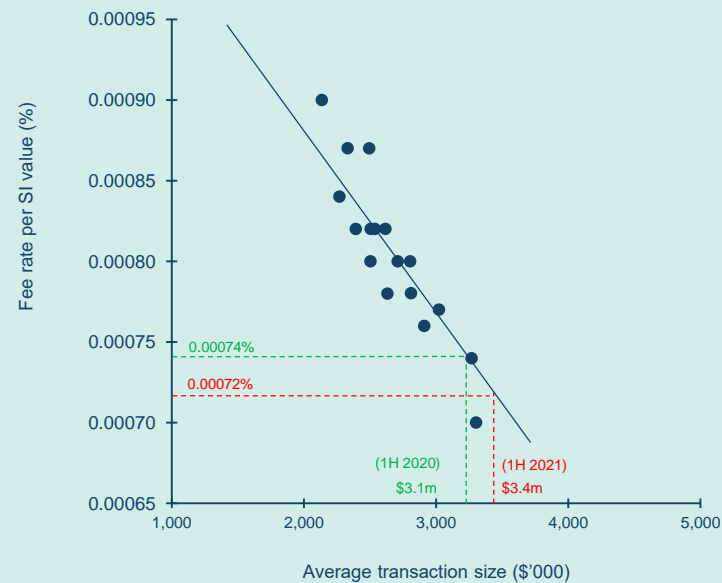
Clearing fees for Cash Market (CM)

Clearing fees are subject to maximum and minimum fees per trade. The increase in average transaction size (1H 2021: \$74k; 1H 2020: \$64k) resulted in a lower proportion of Cash Market trades being subject to the minimum fee of \$2. The fee rate per trade value of various average transaction sizes based on actual fee rates calculated from historical quarterly results from Q1 2017 to Q1 2021 are set out as follows:



Fees for SIs

Fees for SIs are subject to maximum and minimum fees per trade. The increase in average transaction size (1H 2021: \$3.4m; 1H 2020: \$3.1m) resulted in a higher proportion of SI transactions being subject to the maximum fee of \$100. The fee rate per SI value of various average transaction sizes based on actual fee rates calculated from historical quarterly results from Q1 2017 to Q1 2021 are set out as follows:



In general, if the average transaction size increases, it will have a negative impact on the clearing fees and vice versa

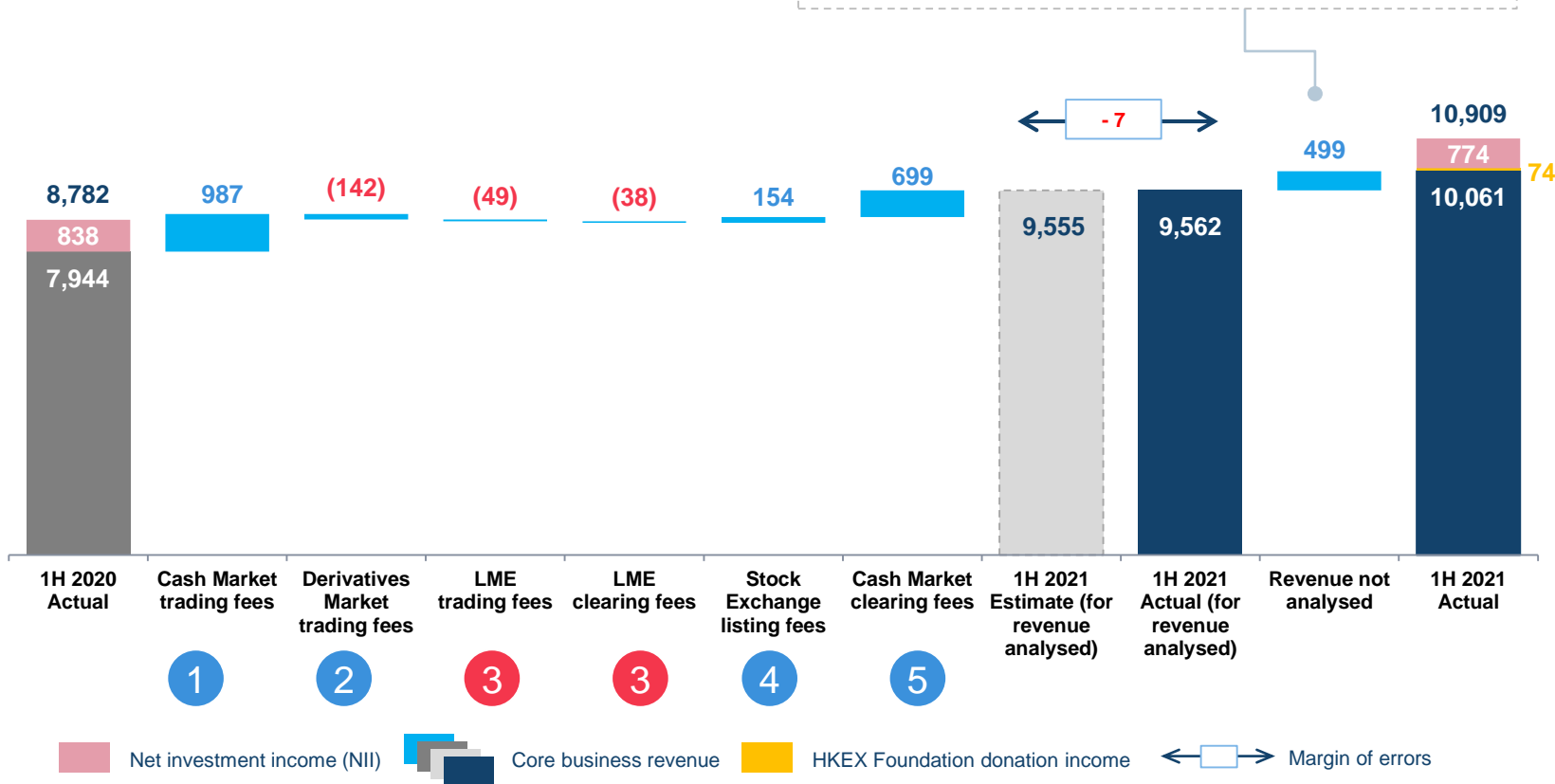


Estimate of 1H 2021 revenue

Total revenue and other income

(\$ million)

- 1) Depository fees ↑ \$338m (further analysis in next section)
- 2) Network fees ↑ \$59m or 20% (2021 1H: \$361m; 2020 1H: \$302m)
Market data fees ↑ \$40m or 8%, (2021 1H: \$512m; 2020 1H: \$472m)
Hosting services fees ↑ \$13m or 12% (2021 1H: \$125m; 2020 1H: \$112m)
(due to organic growth and inflation)
- 3) Others (including accommodation income) ↑ \$49m



Margin of errors for revenue estimates (excluding NII, donation income and revenue not analysed) was \$7m or 0.1%

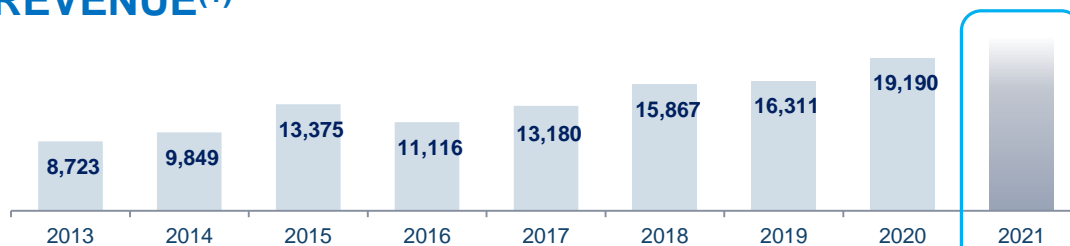


EBITDA margin

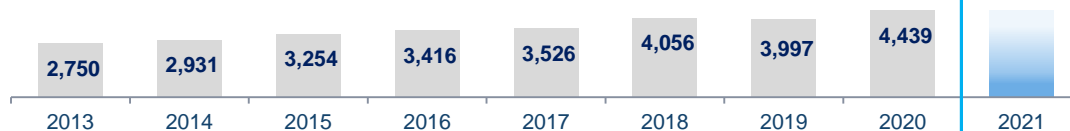
EBITDA margin generally moves in the same direction with revenue

(\$ million)

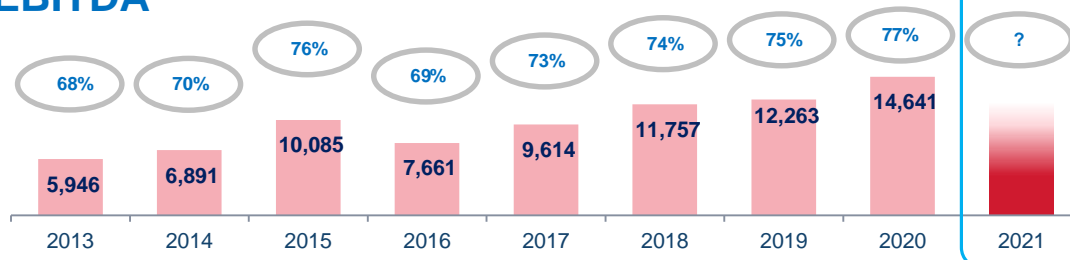
REVENUE⁽¹⁾



OPEX⁽²⁾



EBITDA



EBITDA margin = EBITDA / Revenue less transaction-related expenses

A significant proportion of opex is fixed in nature

If revenue comes under pressure, non-critical projects may be deferred and costs control measures will be implemented to try to maintain an overall EBITDA margin in the region of 65% - 70% (1H 2021: 79%)

1. Represents gross revenue and other income before deducting transaction-related expenses (2013: \$27m; 2014: \$27m; 2015: \$36m; 2016: \$39m; 2017: \$40m; 2018: \$54m; 2019: \$51m; 2020: \$110m)

2. Opex excludes transaction-related expenses, depreciation and amortisation, finance costs, share of results of joint ventures, and certain exceptional costs.



**Discrepancies observed from
consensus estimates**



Depository, Custody and Nominee Services Fees

Further analysis

	Key Drivers	1H 2021 vs. 1H 2020
Scrip Fees	<ul style="list-style-type: none"> ■ Scrip fee is charged to HKSCC Participants when a listed issuer has a book close – this happens when the issuer pays dividends, or has a rights issue, or certain corporate actions. It is chargeable on the net increase in individual participant's aggregate holdings of securities between book closing dates and are unusually large on the first book closing date after a new listing ■ These fees are subject to seasonal fluctuations – Q1 being the lowest and Q2 the highest, as more companies have their book close in Q2 due to dividend payment 	<p>Higher fees from more companies having their book close for dividend payment in 1H 2021, whereas some companies suspending or delaying the dividend payments in 2020 due to COVID</p>
Portfolio Fees	<ul style="list-style-type: none"> ■ Portfolio fees from Stock Connect are charged based on HK Stock portfolio value held by ChinaClear and A-share portfolio value held by HKSCC Participants 	<p>Higher fees from strong inflows to Stock Connect, resulting in higher portfolio values</p>
Electronic IPO Fees	<ul style="list-style-type: none"> ■ Fees are chargeable at \$15 per application instruction (irrespective of successful allotment or not) for eIPO 	<p>Higher fees from buoyant IPO market, and more IPOs using electronic application services provided by HKSCC</p>
Corporate Action Fees Stock Custody Fees Dividend Collection Fees	<ul style="list-style-type: none"> ■ The fees would generally increase in a bull market and growing economy 	<p>Higher fees from strong market momentum</p>

Depository fees vary with a number of drivers set out above, and do not move linearly with changes in ADT.

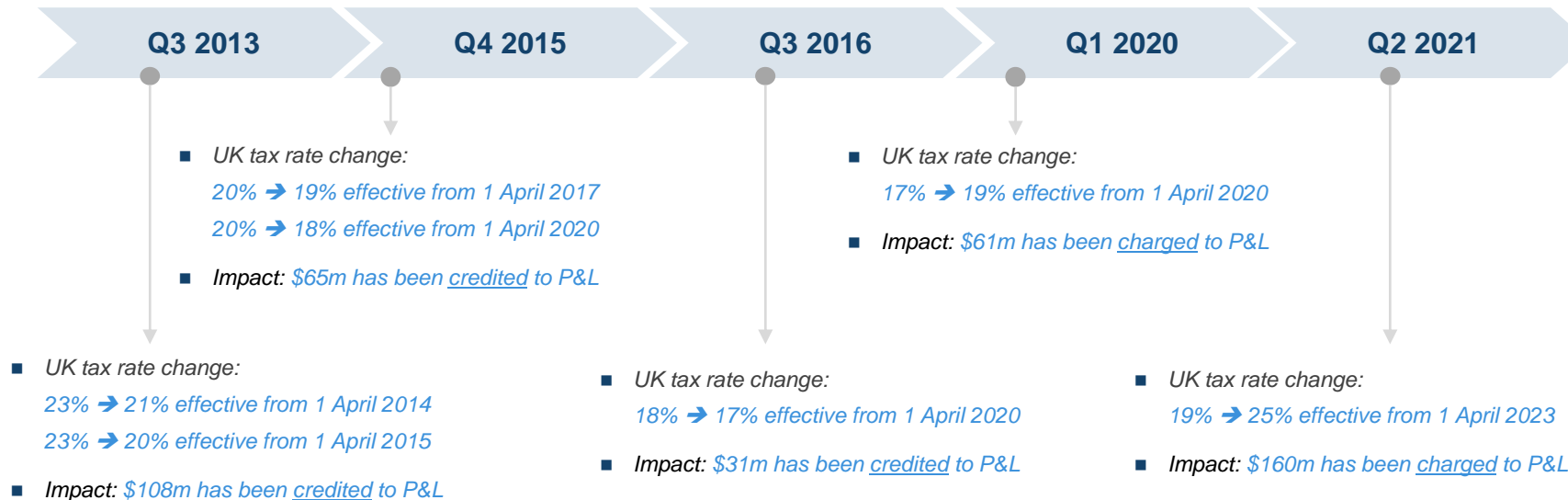


Taxation

UK statutory rates

Background:

- On acquisition of the LME Group, a deferred tax liability (DTL) was recognised on the acquired intangible assets (i.e., tradenames and customer relationship) based on the difference between the carrying amount (i.e., fair value of assets acquired) and their tax base (Nil)
- When the intangible assets are amortised to the P&L, there will be a corresponding deferred tax credit to offset the amortisation charge
- The DTL is remeasured based on the tax rate that are enacted or substantively enacted in the UK (where LME is) at each reporting date. As a result, there will be a P&L impact on remeasurement of DTL in years when the UK corporation tax rate changes.



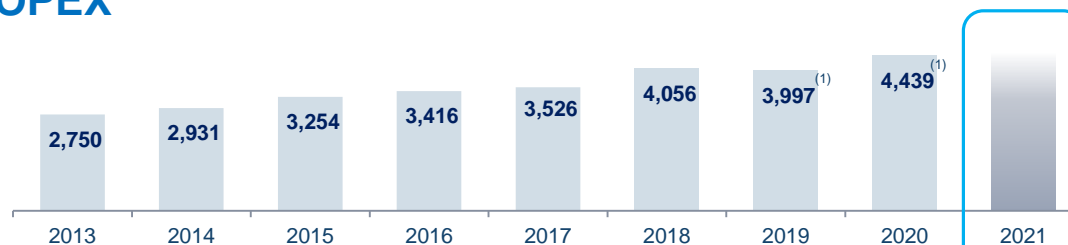
Impact of the change in UK statutory tax rates can be estimated with reference to the updates of Finance Bill/ Act found in <https://www.legislation.gov.uk>



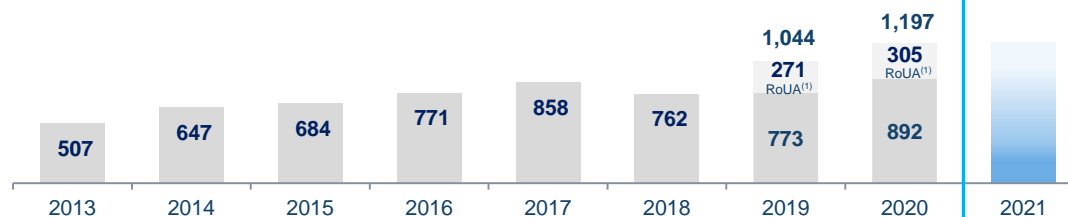
Operating Expenses (OPEX) and Depreciation & Amortisation (D&A)

(\$ million)

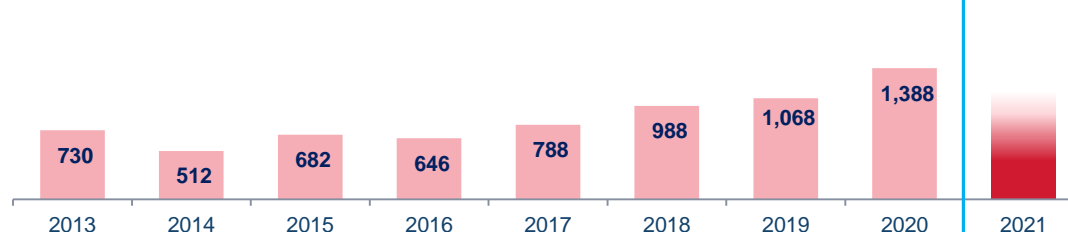
OPEX



D&A



CAPEX⁽²⁾



FUTURE TREND

- **Talent:** Higher staff costs for payroll adjustments on promotions and inflation, and needs for attracting new talent to HKEX for new strategic initiatives and new products in our ecosystem
- **IT infrastructure:** Higher IT and maintenance expenses for new and upgraded systems
- **CAPEX and D&A:** Continue to invest in core system and platform to ensure operational resilience, as well as leveraging new technology to automate/digitise and enhance our process efficiency (eg, FINI, Synapse)
- **Cloud computing arrangement:** Increasing adoption of cloud-based systems (replacing the on-premise systems) would likely result in higher IT costs but CAPEX and D&A would decrease correspondingly

1. As a result of the adoption of HKFRS 16: Leases from 2019, operating lease rentals were no longer recognised under opex. Instead, they were recognised as right-of-use assets (RoUA) and lease liabilities on the statement of financial position, and subsequently charged to P&L under D&A and finance costs.
 2. Capital Expenditure (Capex) excludes RoUAs recognised under HKFRS16: Leases



Investment Portfolio

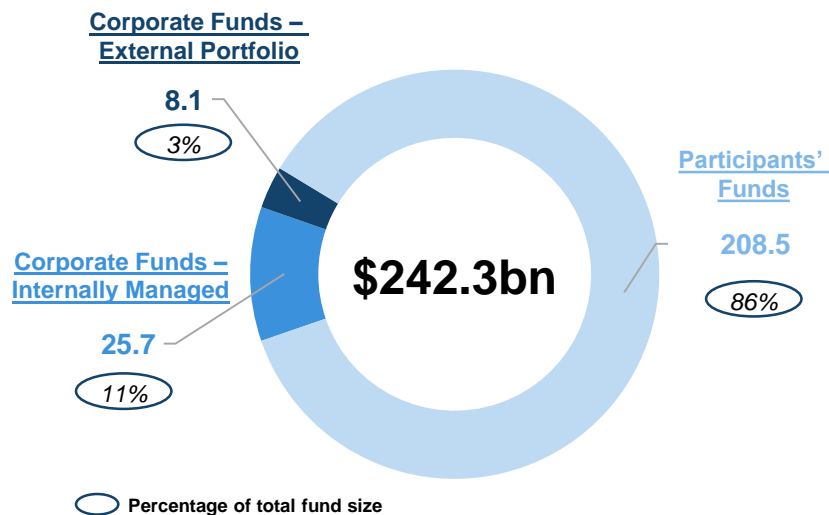
Overview

The Group's Investment Portfolio comprises:

1. Participants' Funds: \$208.5 billion¹ (Margin Funds and Clearing House Funds)
2. Corporate Funds – Internally Managed: \$25.7 billion¹
3. Corporate Funds – External Portfolio: \$8.1 billion^{1,2} (non-core, actively managed by an investment consultant)

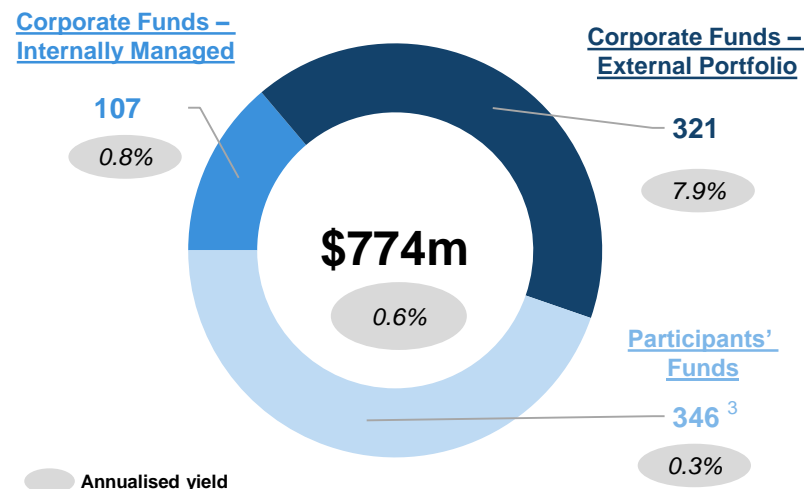
Average Fund Size¹

(HK\$ billion)



Net Investment Income¹

(HK\$ million)

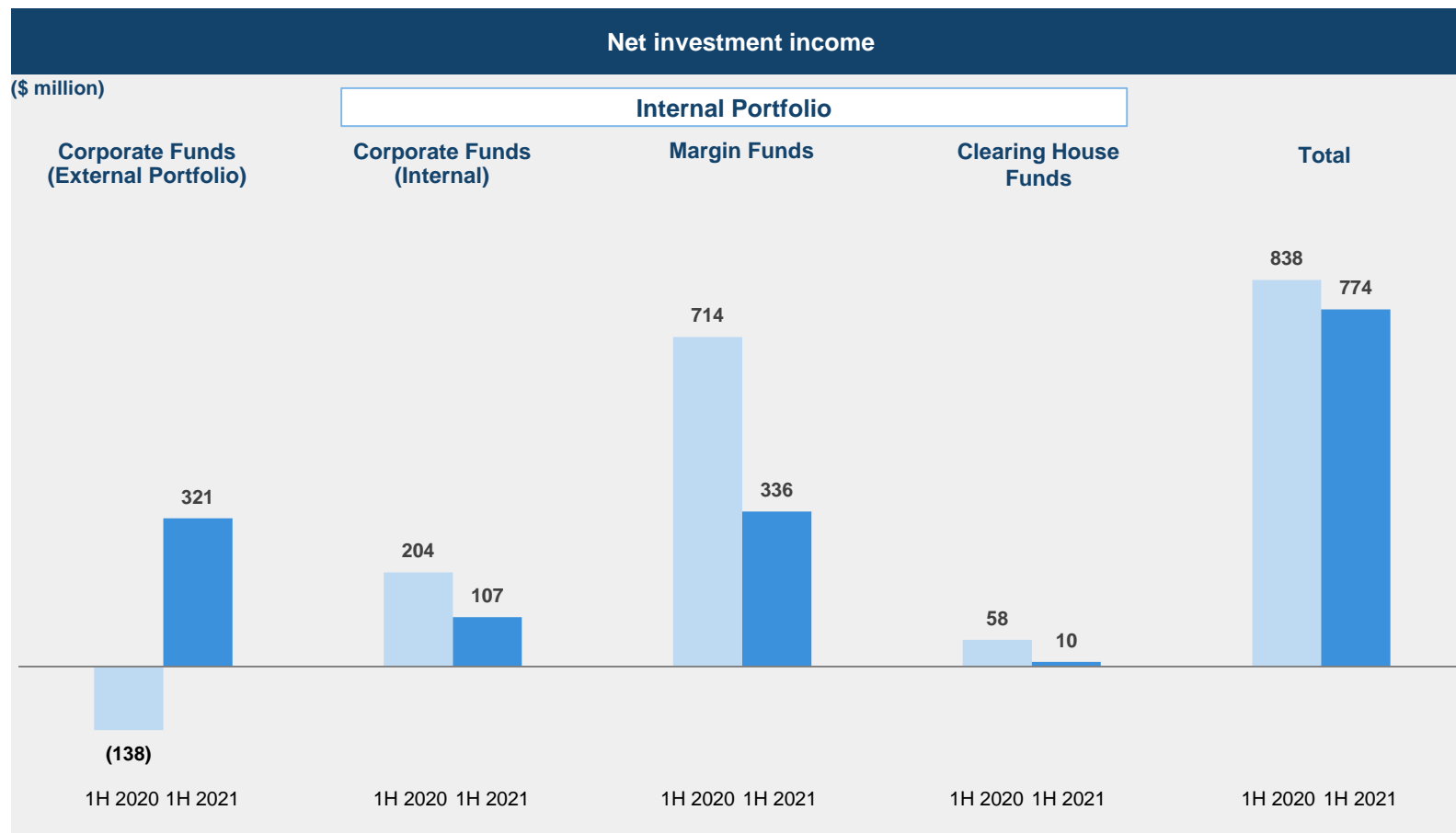


During 1H 2021, the External Portfolio accounted for 3% of total fund size but contributed \$321 million or 41% of total net investment income



Net Investment Income

Net Investment Income (NII) affected by low interest rate environment in 1H 2021

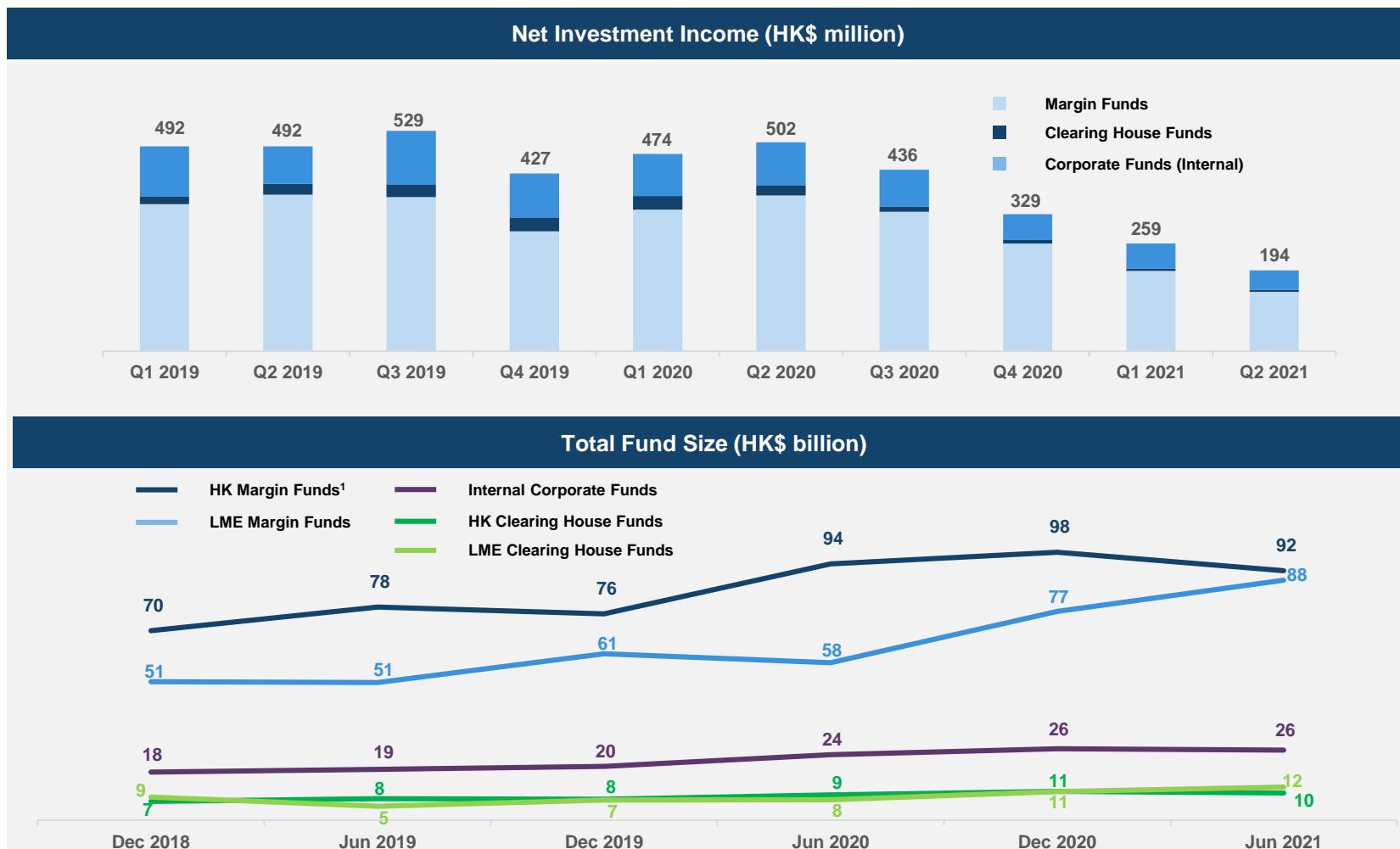


Net investment income for 1H 2021 decreased by 8% compared with 1H 2020, due to reduced investment income from internal funds (-54%), but was partly offset by gain on the External Portfolio



Internal Portfolio

Net investment income mainly contributed by Margin Funds, and affected by fund size and short-term money market rates

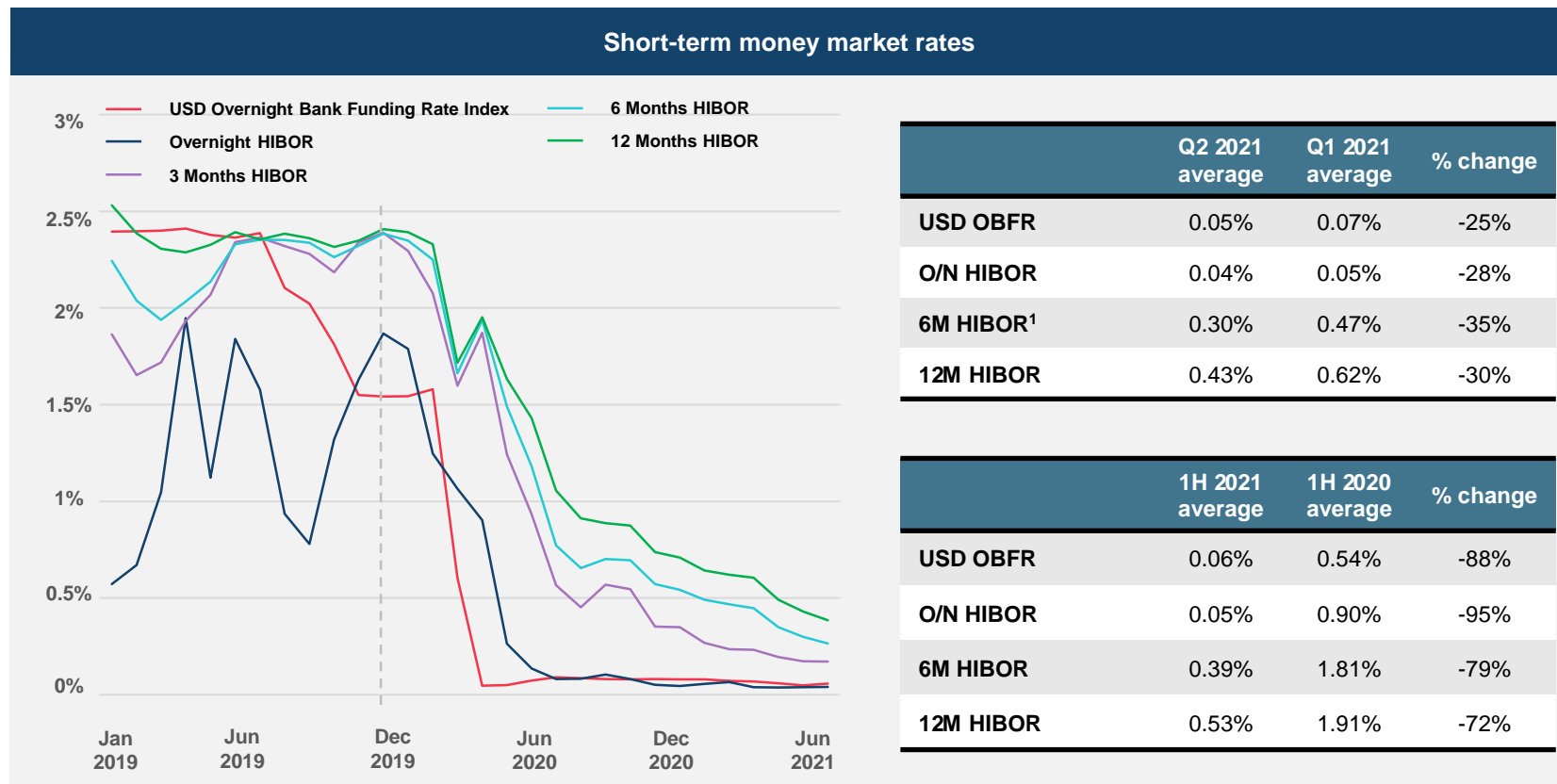


1. Excludes Settlement Reserve Fund and Settlement Guarantee Fund paid to ChinaClear and margin receivable from Clearing Participants



Internal Portfolio

Short-term money market rates started to fall significantly since Q1 2020 when the Fed commenced QE



- Net investment income (NII) dropped significantly in recent quarters mainly due to continuous decline in interest rates
- NII did not decrease at the same pace with interest rates due to (1) impact of higher fund size, (2) deposits previously locked at higher interest rates (lagging effect). The lagging effect would be less meaningful if interest rates continue to stay at the current low level

1. If lagging effects are included, the average 6M HIBOR for Q2 2021 and Q1 2021 would become 0.46% and 0.59% respectively (i.e. a decrease of 22%)

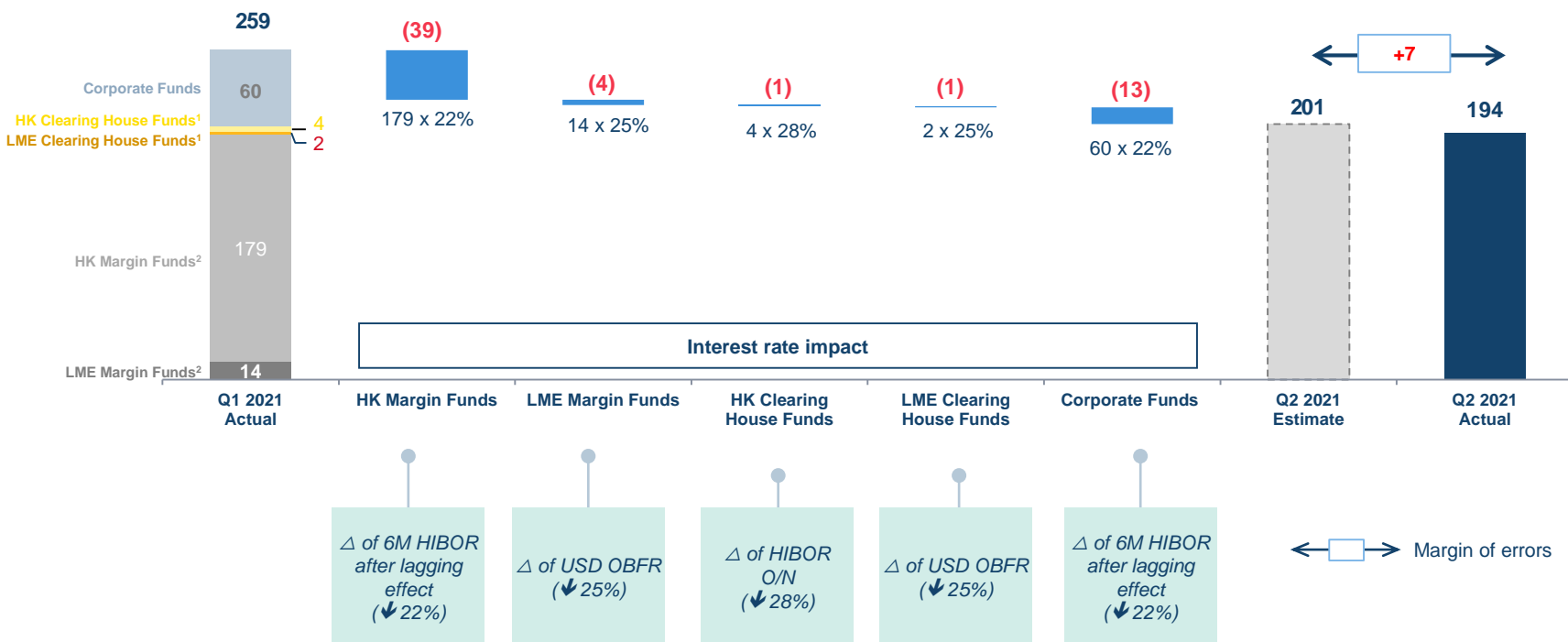


Internal Portfolio

High-level Illustration

Net Investment Income for Internal Portfolio

(\$ million)



The accuracy depends on the estimation on (1) fund size which are dependent on clearing members' open interests and margin requirements imposed by clearing houses; (2) relative split of fund size between LME and Hong Kong; and (3) actual investment return and its relative performance against benchmark interest rates

1. NII from total Clearing House Funds of \$6m is disclosed in the Q1 2021 Results Announcement. NII from LME Clearing House Funds of \$2m is estimated by the average fund size of LME in Q1 2021 (assuming split between HK and LME is same as that as of 31 Dec 2020) multiplied by Q1 2021 average of USD OBFR of 0.07% p.a. The remaining balance of \$4m is assumed to come from HK Clearing House Funds.

Average Clearing House Funds in Q1 2021: \$22.8m;

Split between HK and LME @ 31 Dec 2020: \$11bn : \$11bn = 50% : 50%

2. NII from total Margin Funds of \$193m is disclosed in the Q1 2021 Results Announcement. NII from LME Margin Funds of \$14m is estimated by the average fund size of LME in Q1 2021 (assuming split between HK and LME is same as that as of 31 Dec 2020) multiplied by Q1 2021 average of USD OBFR of 0.07% p.a. The remaining balance of \$179m is assumed to come from HK Margin Funds.

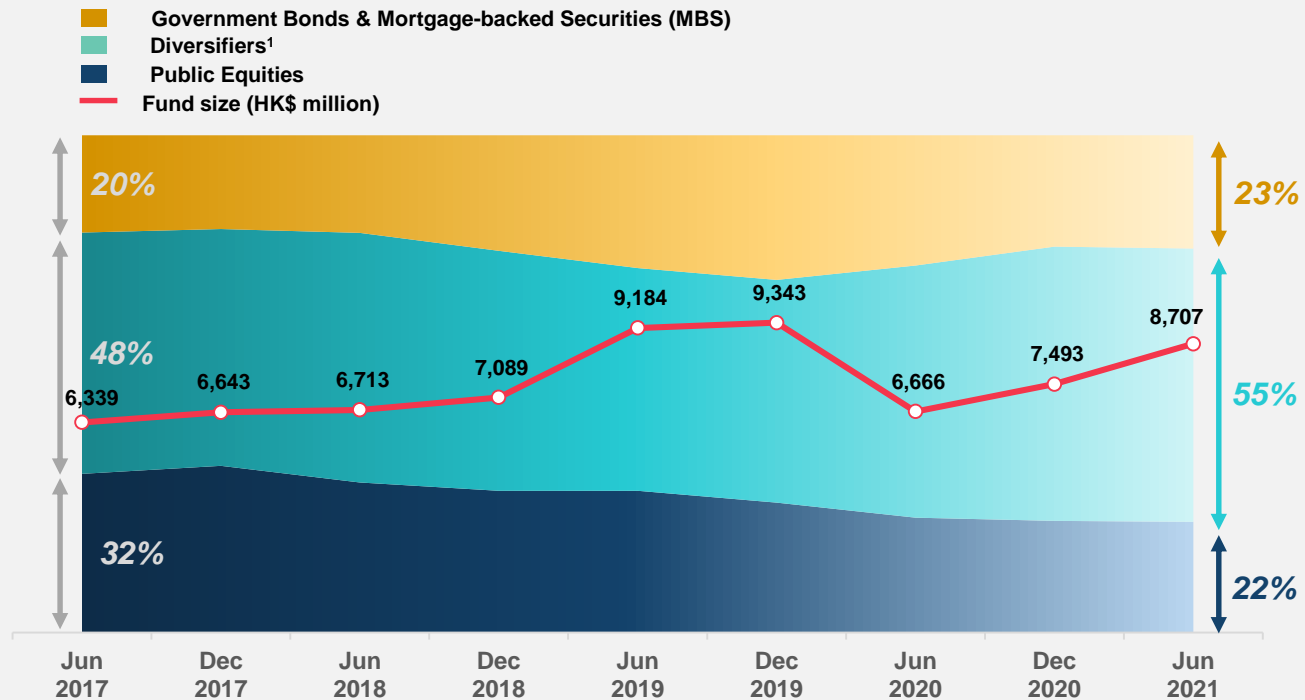
Average Margin Funds size in Q1 2021: \$186.2bn

Split between HK and LME @ 31 Dec 2020: \$98bn : \$77bn = 56% : 44%

External Portfolio

Designed to enhance returns and mitigate portfolio volatility and asset class concentration risk

Fund size and allocation of External Portfolio between Jun 2017 and Jun 2021



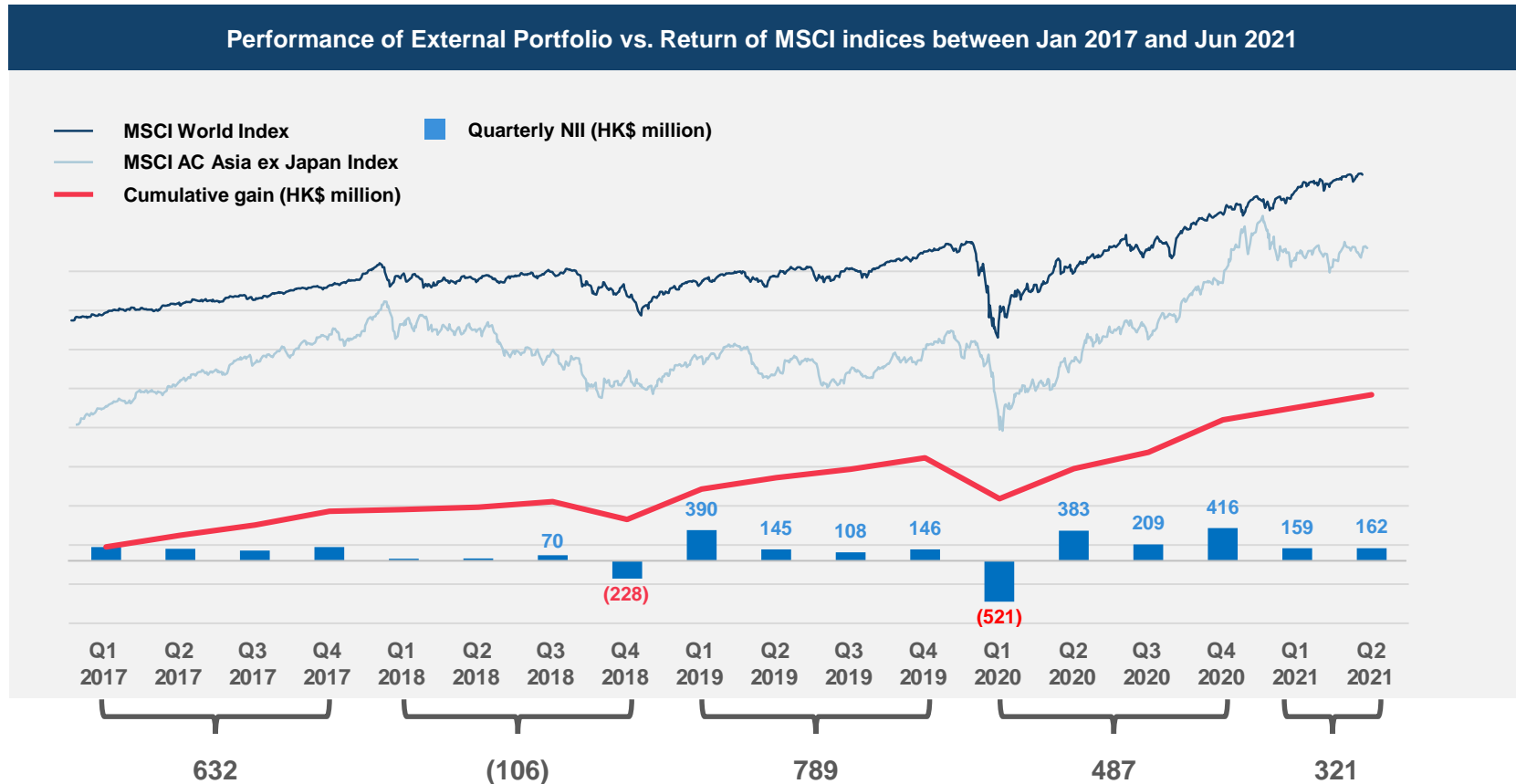
- Highly diversified with over 30 different fund managers across 3 strategies² / 4 asset classes
- Public equities allocation invested mainly in developed markets and Asian markets
- Diversifiers allocation invested in a broad range of strategies which are less correlated to broader equity markets and provides diversification to the overall portfolio
- Government Bonds and MBS allocation is to provide downside protection and liquidity during periods of declines in other asset classes such as equities

1. Diversifiers comprise Absolute Return and Multi-Sector Fixed Income asset classes
 2. The strategies are mainly invested in developed markets and Asian markets, and the allocation between the three strategies vary over time.



External Portfolio

The return of the portfolio is affected by broader markets and fund size

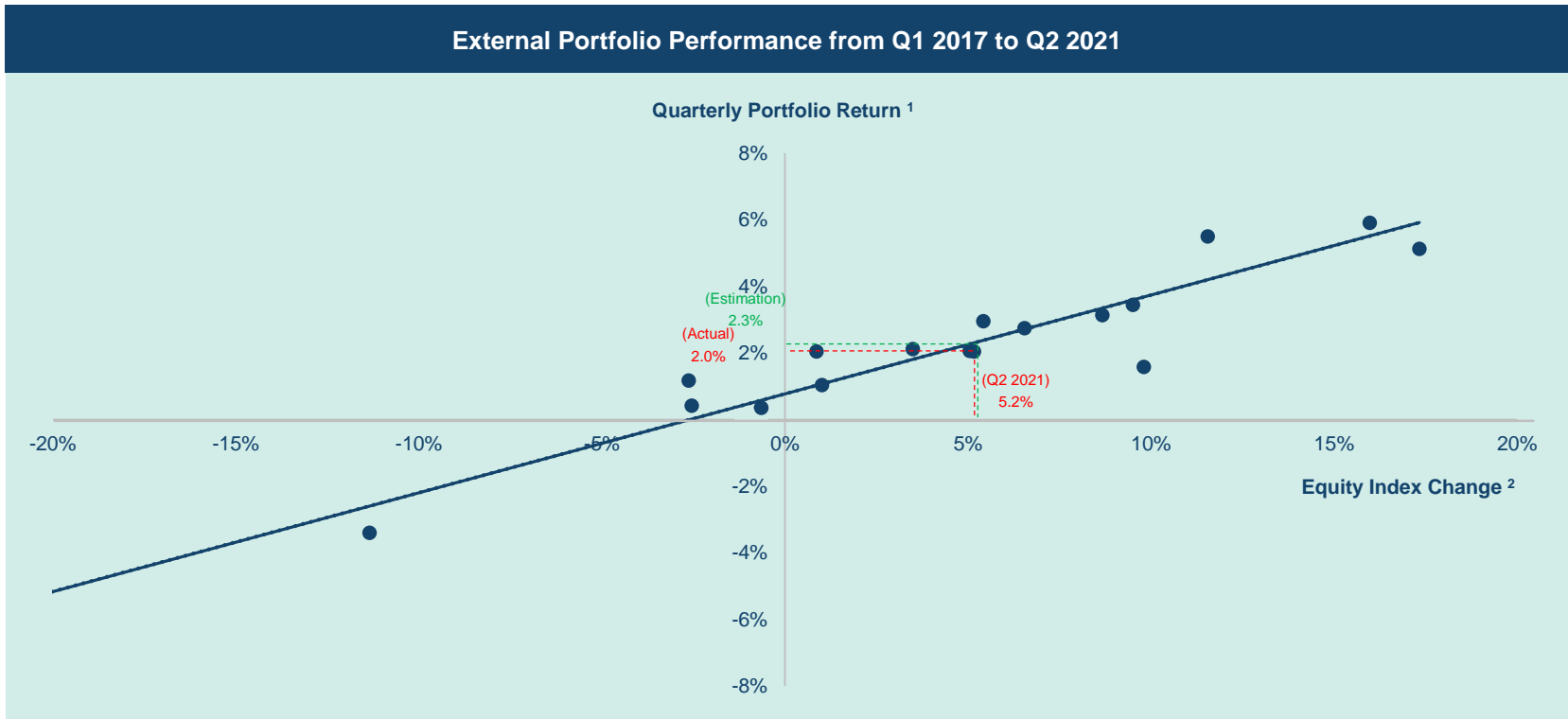


- Cumulative performance of the Portfolio has been largely in line with broader equity markets
- But dampened by investments in the Diversifiers and Government Bonds allocations which are designed to be less correlated to broader equity markets
- The historical quarterly performance of the Portfolio against the broader equity markets is illustrated in the next slide



External Portfolio

Historical quarterly performance against equity market indices



Based on the historical analysis above, the Portfolio has been moving broadly in line with the equity markets. However, the actual performance will be affected by (1) actual allocation to different asset classes (e.g. the equity allocation as a percentage of overall Portfolio) and (2) performance of the individual fund managers against broader equity markets

1. Quarterly portfolio return is calculated by dividing quarterly investment income by the fund size at the beginning of the quarter
2. Equity Index Change is computed based on the simple average of the quarterly change in MSCI World Index and MSCI AC Asia ex Japan Index

